

WHAT IS CLAIMED IS

1. A communications network comprising:

a source node;

a destination node;

at least one airborne intermediary node located aboard an aircraft and including a router for routing a message between said source node and said destination node using one of a VHF or UHF frequency.

2. The communications network of claim 1 wherein said source node is located on the ground.

3. The communications network of claim 1 wherein said destination node is located on the ground.

4. The communications network of claim 1 wherein said source node is a second aircraft.

5. The communications network of claim 1 wherein said destination node is a second aircraft.

6. The communications network of claim 1 wherein said message is a data message. *col 2, 260*

7. The communications network of claim 1 wherein said message is a voice communications message.

8. The communications network of claim 1 wherein said message is a broadband data message.

9. A method for telecommunications comprising the steps of:

receiving at an intermediary node located aboard an aircraft, a request message transmitted from a source node;

4 transmitting a modified request message from said intermediary node
5 including information about said second node; *NAB*

6 receiving at said intermediary node, an acknowledgment message transmitted
7 from a destination node; and

8 retransmitting said acknowledgment message from said intermediary node to
9 said source node, whereby a circuit is established for routing a data message between said
10 source node and said destination node via said intermediary node. *set up circuit*

1 10. The method of claim 9 wherein said steps of transmitting and
2 retransmitting include the step of transmitting on a VHF frequency.

1 11. The method of claim 9 wherein said steps of transmitting and
2 retransmitting include the step of transmitting on an UHF frequency.

1 12. The method of claim 9 wherein said data message is a voice
2 communications message.

1 13. The method of claim 9 wherein said data message is a broadband data
2 message.

1 14. A method for telecommunications comprising the steps of:
2 receiving a message at an antenna located aboard an aircraft;
3 inputting said message to a signal processing device to determine if said
4 message is destined for said aircraft; and
5 retransmitting said message from said aircraft when said message is destined
6 for other than said aircraft.

1 15. The method for telecommunications of claim 14 wherein said step of
2 retransmitting said message further comprises the step of transmitting on a VHF frequency.

1 16. The method for telecommunications of claim 14 wherein said step of
2 retransmitting said message further comprises the step of transmitting on an UHF frequency.

1 17. The method for telecommunications of claim 14 wherein said step of
2 inputting said message to a signal processing device further comprises the steps of:

3 predicting a future position of said aircraft;
4 predicting a future position of a source node from which said message was
5 received; and
6 determining if communications can be maintained with said source node over
7 a predefined time interval.

1 18. The method of claim 14 wherein said message is a broadband data
2 message.

1 19. The method of claim 14 wherein said message is a voice
2 communications message.

1 20. The method of claim 17 wherein said step of inputting said message
2 further comprises the steps of:

3 predicting a future position of a next circuit node; and
4 determining if communications can be maintained with said next circuit node
5 over said predefined time interval.

1 21. A computer program product for a telecommunications network
2 comprising:

3 a computer readable storage medium having computer readable program code
4 means embodied in said medium, said computer readable program code means comprising:
5 a first computer instruction means for accessing a message received at an
6 antenna located aboard an aircraft;

7 a second computer instruction means for determining if said message is
8 destined for said aircraft; and

9 a third computer instruction means for writing said message to a storage
10 device coupled to an aircraft transmitter when said message is destined for other than said
11 aircraft.

1 22. The computer program product of claim 21 further comprising:

2 a fourth computer instruction means for determining if communications can be
3 maintained with a node from which said message was received during a predefined time
4 interval.

1 23. The computer program product of claim 21 further comprising:
2 a fourth computer instruction means for determining if communications can be
3 maintained during a predefined time interval with a node within reception range of said
4 aircraft transmitter.

1 24. The computer program product of claim 23 further comprising:
2 a fifth computer instruction means for reading an aircraft position information.

1 25. The computer program product of claim 22 further comprising:
2 a fifth computer instruction means for reading an aircraft position information.

1 26. The computer program product of claim 21 further comprising:
2 a fourth computer instruction means for writing said message to a local
3 distribution subsystem for routing said message to a system aboard said aircraft.

1 27. An apparatus for routing messages in a telecommunications network
2 comprising:
3 an input for inputting a message received at an antenna located aboard an
4 aircraft;

5 an output; and
6 a signal processing device, coupled to said input and to said output, for:
7 determining if said message is destined for said aircraft;
8 outputting said message to a first storage device coupled to an aircraft
9 transmitter when said message is destined for other than said aircraft; and

10 outputting said message to a second storage device coupled to a local message
11 distribution system when said message is destined for said aircraft.

1 28. The apparatus of claim 27 wherein said signal processing device
2 comprises a general purpose processor.

1 29. The apparatus of claim 27 wherein said signal processing device
2 comprises a router.

1 30. The apparatus of claim 27 wherein said input is further adapted to
2 receive signals indicative of aircraft position and wherein said signal processor determines if
3 communications can be maintained during a predefined time interval with a communications
4 node within reception range of said aircraft transmitter.

1 31. A computer program product for telecommunications comprising:
2 a computer readable storage medium having computer readable program code
3 means embodied in said medium, said computer readable program code means comprising:

4 a first computer instruction means for reading a request message
5 transmitted from a source node and received at an antenna located aboard an aircraft;

6 a second computer instruction means for writing a modified request
7 message including data about said aircraft to a storage device coupled to an aircraft
8 transmitter;

9 a third computer instruction means for reading an acknowledgment message
10 transmitted from a destination node in response to broadcast of said modified request
11 message; and

12 a fourth computer instruction means for writing a modified acknowledgment
13 message including said data about said aircraft to said storage device for transmission from
14 said aircraft and whereby a circuit is established for routing a data message between said
15 source node and said destination node via said aircraft.

1 32. The computer program product of claim 31 further comprising:

2 a fifth computer instruction means for reading an aircraft position information.

1 33. The computer program product of claim 32 further comprising a sixth
2 computer instruction means for predicting if communications over said circuit can be
3 maintained during a predefined time interval.

1 34. An apparatus for routing messages in a telecommunications network
2 comprising:

3 an input:
4 an output; and
5 a signal processing device, coupled to said input and to said output, for:
6 reading a request message transmitted from a source node, received at an
7 antenna located aboard an aircraft and provided to said input;

8 outputting a modified request message including data about said aircraft; ^{623 045t}
9 reading an acknowledgment message transmitted from a destination node in
10 response to a (broadcast) of said modified request message; and ^{0.1.7 0.1.2 65x}

11 outputting a modified acknowledgment message [including said data about said
12 aircraft] for transmission from said aircraft whereby a circuit is established for routing a data
13 message between said source node and said destination node via said aircraft.

1 35. The apparatus of claim 34 wherein said signal processing device
2 comprises a general purpose processor.

1 36. The apparatus of claim 34 wherein said signal processing device
2 comprises a router.

1 37. The apparatus of claim 34 wherein said input is further adapted to
2 receive signals indicative of aircraft position and wherein said signal processor determines if
3 communications can be maintained during a predefined time interval with a communications
4 node within reception range of said aircraft transmitter.

1 38. A telecommunications network architecture comprising:
2 a source node;
3 a destination node; and
4 a plurality of airborne aircraft, each airborne aircraft having a radio
5 transmit and receive capability, for routing a packet data between said source node and said
6 destination node via said plurality of airborne aircraft.

1 39. The telecommunications network of claim 38 wherein said source node
2 is an aircraft.

1 40. The telecommunications network of claim 38 wherein said destination
2 node is an aircraft.

1 41. The telecommunications network of claim 38 wherein at least one of
2 said source node or said destination node is a groundbased network.

1 42. The telecommunications network of claim 38 wherein said transmit
2 and receive capability includes a VHF transmit and receive capability.

1 43. The telecommunications network of claim 38 wherein said transmit
2 and receive capability includes an UHF transmit and receive capability.